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ORCHIDACEAE NEOTROPICALES I DE ORCHIDACEIS INDIGENIS INSULARUM TRINIDAD ET TOBAGO NOTULAE

BY

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THE following miscellaneous notes have accumulated during the preparation of a monograph on the orchids of Trinidad and Tobago.

Trinidad's place in orchid horticulture has been very important. This was especially so during the first half of the 19th Century. Some of the species mentioned below have been collectors' prizes. Others represent curious or little known "botanicals" of great interest to the taxonomist and phytogeographer.

There have been two comprehensive taxonomic treatments covering the orchids of Trinidad and Tobago. The earlier one is A. H. R. Grisebach's "Flora of the British West Indian Islands"; it was issued from 1859 to 1864 and enumerated 97 species of orchids from the Colony. In 1910, A. Cogniaux published a treatise on the orchids of the West Indies in volume six of Urban's "Symbolae Antillanae"; he recognized 148 species and a few varieties as native to Trinidad and Tobago.

Since 1910, the number of orchids known from Trinidad and Tobago has grown appreciably as a result of careful and persistent collecting. This is due in great part to the remarkable field work of the late Mr. Walter

E. Broadway (cf. *Orch. Rev.* 43 (1935) 354). In the 1920's, Broadway published in the *Orchid Review* a series of papers on his discoveries. Many of the rare species, found on the islands for the first time, or re-collected after a lapse of many years, were briefly discussed, and valuable ecological and cultural notes were included for some of the species. It is unfortunate that Broadway never cited herbarium specimens to authenticate his discoveries. The Orchid Herbarium of Oakes Ames, where most of Broadway's later collections were determined, counts itself fortunate in having a rather complete set of Broadway's material. A number of the Broadway collections which established new records in plant distribution, but which were not cited in Broadway's papers, are here enumerated for the first time.

Recently, Dr. Wilbur G. Downs and Dr. T. H. G. Aitken of the Trinidad Regional Virus Laboratory in Port-of-Spain have made extensive and discerning collections of native orchids. They have brought these collections into cultivation and have prepared a series of outstandingly excellent photographs of the living plants. Many represent species not hitherto illustrated. A complete set of these photographs is deposited in the Orchid Herbarium of Oakes Ames, where the corresponding specimens have been identified and are preserved.

For the purpose of easy reference for both collector and orchid lover who may not be familiar with any phylogenetic system of generic classification, the genera, and under them the species, are here arranged alphabetically. Specimens for this study have been available from the Trinidad Herbarium at the Imperial College of Tropical Agriculture, from the Royal Botanic Gardens, Kew, from the Orchid Herbarium of Oakes Ames of the Botanical Museum of Harvard University and from the Gray Herbarium of Harvard University. Several new

combinations are made herein and sundry names are reduced to synonymy.

For permission to publish the excellent photographs in this article, I am indebted to Dr. Downs. The drawings have been prepared by Mr. Elmer W. Smith.

CATASETUM *L. C. Richard*

Catasetum barbatum (*Lindl.*) *Lindley* in Bot. Reg. 30 (1844) Misc. 38.

Myanthus barbatus Lindley in Bot. Reg. 31 (1835) t. 1778.

Known previously from the northern half of South America, *Catasetum barbatum* is now recorded from Trinidad on the basis of the collections cited below.

TRINIDAD: September [no year given], *Broadway s.n.* (Herb. Trin. 8750); Royal Botanic Gardens, September 1891, *Alexander s.n.* (Herb. Trin. 5431); September 19, 1914, *Nurse s.n.* (Herb. Trin. 8751); Siparia, April 14, 1916, *Broadway (?) s.n.* (Herb. Trin. s.n.); North Trace via Princes Town, August 19, 1918, *Broadway s.n.* (Herb. Trin. 8836, 8837); June 1925, *Homersley s.n.* (Herb. Trin. 11846).

Catasetum cernuum (*Lindl.*) *Reichenbach fil.* in Walpers Ann. Bot. 6 (1863) 570.

This species has been cited from Trinidad by Cogniaux, but, as Mansfeld has pointed out (in Fedde Repert. Sp. Nov. 31 (1932) 109), it does not occur naturally in Trinidad. The specimens in the Trinidad Herbarium (Nos. 8836, 8837) which have been identified as *Catasetum cernuum* are small forms of *C. barbatum*.

CATTLEYA *Lindley*

Cattleya Deckeri *Klotzsch* Allgem. Gartenz. 23 (1855) 81.

This species was cited from Trinidad by Cogniaux through a *Bradford* and a *Crueger* collection. We now have available several additional collections. The species

is widespread from Mexico throughout Middle America and the West Indies and possibly in northern South America.

TRINIDAD: Gasparillo Road, Santa Cruz Valley, February 1, 1926, *Freeman s.n.* (Herb. Trin. 11506); Santa Cruz, January 22, 1927, *Williams s.n.* (Herb. Trin. 11718; Herb. Ames 68193).

CORYANTHES *Hooker*

Coryanthes macrantha (*Hook.*) *Hooker* in Bot. Mag. (1831) t. 3102.

Gongora macrantha Hooker Bot. Misc. 2 (1831) 151.

This species, called "monkey orchid" in Trinidad, was cited by Cogniaux through a cultivated specimen. Although we now have a number of additional collections from Trinidad, all are from gardens, and we are still not certain as to whether or not this orchid, known from Venezuela and British Guiana, may be an indigenous species on the island.

TRINIDAD: Botanic Gardens (Herb. Trin. 4585); June 1896 (Herb. Trin. s.n.); St. Clair Experimental Station, April 12, 1907, *Broadway s.n.* (Herb. Ames 10220); St. Clair Experimental Station, April 23, 1908, *Broadway s.n.* (Herb. Ames 10714); St. Clair Experimental Station, May 18, 1908, *Broadway s.n.* (Herb. Ames 10652); July 7, 1908, *Broadway s.n.* (Herb. Ames 11676); St. Mary's College, 1927, *Graff s.n.* (Herb. Trin. s.n.).

CYRTOPODIUM *R. Brown*

Cyrtopodium Andersonii (*Lamb. ex Andrews*) *R. Brown* in Aiton Hort. Kew, ed. 2, 5 (1813) 216.

Cymbidium Andersonii Lambert ex Andrews Bot. Repos. 10 (1811) 651.

Cyrtopodium Andersonii may not occur naturally in Trinidad. Both Hart and Lockhart were wont to gather material from cultivated sources, and it is very possible that the two collections cited below are from cultivation.

When Broadway (in Orch. Rev. 34 (1926) 133) re-

ported *Cyrtopodium Andersonii* from the Bocas Islands, he was referring to *C. punctatum*. He stated that he was giving the "specific name with some hesitation." All of the Trinidad collections of *Cyrtopodium punctatum* are from Chacachacare, one of the Bocas Islands (*vide sub C. punctata*).

TRINIDAD: *Hart s.n.* (Herb. Trin. 1817): *Lockhart s.n.* (cited by Cogniaux).

***Cyrtopodium Broadwayi* Ames** *Orchid.* 7 (1922) 51, t. 112.

Broadway (loc. cit. 133) reported *Cyrtopodium Broadwayi* as "fairly plentiful." The wealth of material cited below indeed stresses the abundance of the species at Aripo Savannah. This species is apparently endemic to Trinidad. It has been confused with *Cyrtopodium cristatum* Lindl. of northern South America.

TRINIDAD: Aripo Savannah (Herb. Trin. s.n.); Piarco Savannah, *Lunt s.n.* (Herb. Trin. 6021); Aripo Savannah, *Hart s.n.* (Herb. Trin. 5326); Caroni Savannah, 1888, *Hart s.n.* (Herb. Trin. 3499); Botanic Gardens, February 27, 1893, *Hart s.n.* (Herb. Trin. 5261); Aripo Savannah, March 26, 1893, *Broadway s.n.* (Herb. Trin. 5326); April, 1896, *Alexander (?) s.n.* (Herb. Trin. s.n.); Aripo Savannah, April 16, 1908, *Broadway 2343* (TYPE, Herb. Ames 11713), Aripo Savannah, August 19, 1908, *Broadway 2343a* (Herb. Trin. s.n.); July 28, 1909, *Broadway 2343b* (Herb. Ames 11712); Aripo Savannah, February 13, 1915, *Freeman s.n.* (Herb. Trin. 8044; Herb. Ames 66997); Aripo Savannah, March 5, 1920, *Britton, Broadway & Hazen 313* (Herb. Trin. 10526); February-March 1921, *Bailey & Bailey T40* (Herb. Ames 20553); Aripo Savannah, January 31, 1922, *Broadway s.n.* (Herb. Trin. 10498); near Mount Tamana, Mount Harris, February 2, 1922, *Nowell s.n.* (Herb. Trin. 10502); Aripo Savannah, April 2, 1953, *Baker & Simmonds s.n.* (Herb. Trin. 14921).

***Cyrtopodium punctatum* (L.) Lindley** *Gen. & Sp. Orch.* (1833) 188.

Epidendrum punctatum L. *Syst. ed.* 10 (1759) 1246.

Cyrtopodium punctatum in Trinidad has been confused with *C. Andersonii* (*q. vide*). Cogniaux reported it from

Trinidad on the basis of one collection: *Othmer 121*. It appears to be not infrequent at Chacachacare, as shown by the material cited below.

TRINIDAD: Chacachacare, April 18, 1865 (Herb. Trin. 1972); May 23, 1908, *Evans s.n.* (Herb. Ames 10683, 10684, 10685); Chacachacare, May 18, 1916, *Doyle s.n.* (Herb. Trin. 8121); Chacachacare, May 1925, *Williams s.n.* (Herb. Trin. 11059).

DIACRIUM *Bentham*

Diacrium indivisum (*Bradf.*) *Broadway* in Bull. Misc. Inform. Trinid. 2 (1895) 79.

Epidendrum indivisum Bradford in Grisebach Fl. Br. W. Ind. Isl. (1864) 614.

Diacrium bicornutum (Hook.) Bentham var. *indivisum* (*Bradf.*) Cogniaux in Martius Fl. Bras. 3, pt. 5 (1898) 188.

There has been some difference of opinion as to whether this concept should be treated as a variety of *Diacrium bicornutum* or as a distinct species. There seems to be sufficient morphological evidence to maintain it as distinct, and the extreme difference in choice of habitat of *Diacrium bicornutum* and *D. indivisum* would seem to support such a disposition. After studying living material with perfect flowers, Rolfe (in Orch. Rev. 11 (1903) 187) presented the evidence for maintaining the two concepts as distinct. Cogniaux, nevertheless, preferred the varietal treatment.

Cogniaux cited one collection—the type—from Trinidad. Apparently an endemic, *Diacrium indivisum* is now known from a number of localities on the island.

It will be of interest here to quote the field notes of the experienced orchid-collector, Mr. Broadway (in Orch. Rev. 34 (1926) 131), concerning the habitats of these two orchids: “*Diacrium bicornutum*. Along wind-swept sea-coast districts is the real home of *D. bicornutum* Benth.,

the 'Virgin Orchid.' It grows upon rocks, as on some of the Bocas islands, and certain of the coastal parts of the colony, or established in the higher boughs of tall trees, as along the southern coast of Ananzanilla [Manzanilla]. It is never, to my knowledge, found inland. Frequently, the older plants grow into large clumps, and, seated upon either rock or tree, are observed to be in the full blast of sea spray, and high, strong winds, which oftentimes become gales of violence. The pseudobulbs are long and bulging, being hollow inside and forming the abode of ants, usually.

“*Diacrium bicornutum* var. *indivisum*. Contrary to the habits of the preceding plant, there is another which likes the inland districts of the colony, and presumably it is never found close to the sea. . . . It is of smaller proportions altogether, but the most unobservant would recognize the similarity to its relatives. . . . The whole plant only assumes small clump proportions at its maximum development.”

TRINIDAD: “Inland Districts” (Herb. Trin. 5512); “Inland woods” (Herb. Trin. 5983); Savannah near Government House, June 3, 1907, *Broadway s.n.* (Herb. Ames 10736); “Savanna. . . . near Government House Grounds,” June 22, 1907, *Broadway s.n.* (Herb. Ames 10727); Erin, March 27, 1908, *Broadway s.n.* (Herb. Ames 10640); River Estate, February 18, 1926 (Herb. Trin. 11518); St. Augustine, April 25, 1949, *Simmonds 351* (Herb. Trin. 14338; Herb. Ames 66931).

DICHAEA *Lindley*

***Dichaea graminoides* (Sw.) Lindley** Gen. & Sp. Orch. Pl. (1833) 209.

I have seen no material from Trinidad or Tobago which can be referred with certainty to *Dichaea graminoides*. It is clear from an examination of several collections at Kew, which Cogniaux cited from Trinidad as *Dichaea graminoides* (but which actually represent *D. picta*), that there was some confusion in his treatment of this species.

I have not seen *Broadway 3119* from Tobago, which Cogniaux ascribed to *D. graminoides*.

***Dichaea hystricina* Reichenbach fil.** *Flora* 48 (1865) 279.

Known from Cuba, Guadeloupe, Dominica, Grenada and Middle America, *Dichaea hystricina* has not hitherto been reported from Trinidad with the citation of authenticating material.

TRINIDAD: Oropouche, April 1896, *Alexander s.n.* (Herb. Trin. 6096).

***Dichaea muricata* (Sw.) Lindley** *Gen. & Sp. Orch. Pl.* (1833) 209.

Cymbidium muricatum Swartz in *Nov. Act. Upsal.* 6 (1796) 71; *Fl. Ind. Occ.* 3 (1799) 1454.

Common in most of the West Indies, Middle America and northern South America, *Dichaea muricata* apparently has not hitherto been cited, on the basis of specimens, from Trinidad or Tobago.

TRINIDAD: Heights of Aripo, January 10–26, 1922, *Broadway s.n.* (Herb. Trin. 9887); Nestor Village, February 12, 1955, *Downs & Aitken 22* (Herb. Ames 67322).

***Dichaea picta* Reichenbach fil.** in *Saunders Ref. Bot.* 2 (1870) t. 84.

Dichaea picta was not cited by Cogniaux from Trinidad and Tobago.

TRINIDAD: (Herb. Trin. 405); *Crueger s.n.* (Herb. Kew); February 1846, *Bradford s.n.* (Herb. Kew); November 7, 1881, *Fendler 782* (Herb. Kew); Maraval, February 4, 1911, *Broadway 4131* (Herb. Kew); Aripo Savannah, February 13, 1915, *Freeman s.n.* (Herb. Trin. 8048); September 3, 1919, *Broadway s.n.* (Herb. N.Y. Bot. Gard.); El Tucuche, January 17, 1924, *Hill, Williams et al s.n.* (Herb. Trin. 10705); Maraval, January 14, 1926, *Broadway 6270* (Herb. Kew); Maraval, March 1926, *Broadway s.n.* (Herb. Kew); Caroni, April 30, 1925, *Freeman, Williams et al s.n.* (Herb. Trin. 11021); Saut d'Eau, north coast, December 14, 1930, *Broadway 7438* (Herb. Ames 37199).

***Dichaea Rendlei* Gleason** in *Bull. Torr. Bot. Club* 54 (1927) 604.

Dichaea Rendlei is known from British Guiana, Guadeloupe and Trinidad. The two Trinidad collections differ from the type in having a rounded, instead of a subacute, anchoraeform lip, but, in other characters, they can easily be accommodated within the concept.

TRINIDAD: Aripo, April 16, 1908, *Broadway 2330* (Herb. Ames 10668); Mora Forest, September 3, 1925, *Williams s.n.* (Herb. Trin. 11347; Herb. Ames 66928).

Inasmuch as Cogniaux cited but one species of *Dichaea* from Trinidad, it may be helpful to have the following key to distinguish the concepts now recognized from the Colony.

1. Leaves not articulate, persistent.
 2. Leaves relatively large, distant (0.8–1 cm. or more apart) glabrous; margins entire. *Dichaea muricata*
 - 2A. Leaves very small, close (less than 4 mm. apart), echinulate on both surfaces; margins denticulate-ciliate. *Dichaea hystericina*
- 1A. Leaves articulate at base, deciduous.
 3. Leaves narrowly linear. Petals lanceolate. Lip conspicuously keeled. *Dichaea graminoides*
 - 3A. Leaves oblong-ligulate. Petals ovate or oblong. Lip without keel.
 4. Leaves apiculate. Lateral sepals ovate, 5–5.5 mm. long. Petals 4 mm. long. Lip anchor-shaped, lateral lobes linear. *Dichaea Rendlei*
 - 4A. Leaves not apiculate. Lateral sepals broadly lanceolate, 7–8 mm. long. Petals 7–8 mm. long. Lip triangular-sagittate; lateral lobes triangular-falcate. *Dichaea picta*

EPIDENDRUM *Linnaeus*

Epidendrum anceps *Jacquin* Sel. Stirp. Amer. (1763) 224, t. 138.

Collections of this common and wide-ranging orchid have apparently not hitherto been cited from Trinidad and Tobago.

TRINIDAD: Heights of Aripo, January 10-26, 1922, *Broadway s.n.* (Herb. Trin. 9902); Saut d'Eau, March 8, 1931, *Broadway 7501* (Herb. Ames 37540).

***Epidendrum Bradfordii* Grisebach** Fl. Br. W. Ind. Isl. (1864) 613.

The collection cited below represents an individual, probably of this species, with peloric flowers. *Epidendrum Bradfordii*, known hitherto only from the type collected by Bradford at Arima, is apparently a rare endemic.

TRINIDAD: Aripo, April 16, 1908, *Broadway 2334* (Herb. Ames 10662).

***Epidendrum cristatum* Ruiz & Pavón** Syst. Veg. (1798) 243.

Epidendrum raniferum Lindley Gen. & Sp. Orch. Pl. (1831) 109.

Epidendrum raniferum Lindley var. *luteum* Lindley Fol. Orch. Epidendrum (1853) 53.

Epidendrum cristatum has apparently not hitherto been cited from Trinidad, except for the collection *Hart 3669* which was reported as *E. raniferum* var. *luteum*.

It would seem that the characters upon which Lindley based his varietal concept *luteum* are neither fundamental nor stable. The lip and the coloration of the flower are very variable in *Epidendrum cristatum*, and since the variety was based on color and lip characters, I am reducing it to synonymy under *Epidendrum cristatum*.

A complete synonymy of *Epidendrum cristatum* is given in Ames, Hubbard and Schweinfurth "The genus *Epidendrum* in the United States and Middle America" (1936) 166 and by Schweinfurth in Bot. Mus. Leafl. Harvard Univ. 11 (1944) 222.

TRINIDAD: July 29, 1865 (Herb. Trin. 1975); Botanic Gardens, 1888, *Broadway s.n.* (Herb. Trin. 3669); Cedros, December 1889,

Alexander s.n. (Herb. Trin. 4992); Maraval, 1894, *Baptiste s.n.* (Herb. Trin. 5490); March 5, 1921, *Broadway s.n.* (Herb. Trin. 10500); Botanic Gardens, February 15, 1933, *Bruins-Lich s.n.* (Herb. Trin. 12752); *Hart 3669* (cited by Cogniaux).

***Epidendrum Hartii* Rolfe** in Kew Bull. (1894) 157.

Cogniaux enumerated five collections of this beautiful *Epidendrum* from Trinidad and Tobago, and reported it as frequent in Trinidad. The truth of this statement is shown by the large number of collections (in addition to those cited by Cogniaux) from the island.

Epidendrum Hartii, once thought to be endemic to Trinidad and Tobago, has recently been found in Venezuela in the Estado de Anzoátegui: between Río León of Quebrada Danta and Río Zumbador, northeast of Bergantín, 500–600 m., February 24, 1945, *Steyermark 61125* (Herb. Ames 64919).

TRINIDAD: Heights of Maraval, *Broadway s.n.* (Herb. Ames 16555); February 25, 1889, *Broadway s.n.* (Herb. Trin. 3552); April 22, 1890, *Broadway s.n.* (Herb. Trin. 4023); Maraval, April 1894, *Alexander s.n.* (Herb. Trin. 5460; Herb. Ames 66940); Government House Grounds, February 25, 1907, *Broadway s.n.* (Herb. Ames 10067, 10068, 10069); St. Clair Experiment Station, January 6, 1908, *Broadway s.n.* (Herb. Ames 10717, 10718, 10719); March 22, 1920, *Broadway s.n.* (Herb. Ames 22019); Maracas Falls, March 27, 1924, *Hombersley s.n.* (Herb. Trin. 11202); Arena Forest Reserve, 1948, *Ayliffe s.n.* (Herb. Trin. 14261); Mt. Tucuche, alt. 1500 ft., February 28, 1954, *Baker s.n.* (Herb. Trin. 15112; Herb. Ames 66943); St. Patrick's Estate, Arima, March 8, 1955, *Downs & Aitken 30* (Herb. Ames 67832).

***Epidendrum imatophyllum* Lindley** Gen. & Sp. Orch. Pl. (1831) 106.

Epidendrum flexuosum G. F. W. Meyer Prim. Fl. Esseq. (1818) 260.

This widely ranging species seems not to have been reported from Trinidad. The name *Epidendrum flexuosum* refers probably to the same concept, but the original description is too vague to permit the adoption of the

binomial (Ames, Hubbard and Schweinfurth: loc. cit. 107).

TRINIDAD: Cunupia, March 23, 1892, *Alexander s.n.* (Herb. Ames 7451); St. Ann's (Cascade), March 6, 1894, *Hart s.n.* (Herb. Trin. 5481); St. Clair Experiment Station, April 16, 1907, *Broadway s.n.* (Herb. Ames 10205, 10206, 10207).

Epidendrum laxum Poeppig & Endlicher Nov. Gen. ac Sp. 2 (1838) 2.

Epidendrum yatapuense Barbosa-Rodríguez in Vellozia 1, ed. 2 (1891) 123.

Epidendrum macrothyrsis Lehmann & Kränzlin in Engler Bot. Jahrb. 26 (1899) 472.

An examination of the type of *Epidendrum laxum*, which is preserved in the Vienna herbarium, shows that it represents the same concept which has been called *E. yatapuense* and *E. macrothyrsis*. There is rather appreciable variability in the size and luxuriance of the plants. The type is a large specimen with a long inflorescence, whereas the Trinidad material represents small individuals. In critical characters, however, there is little variation in the material gathered over the range of the species: Trinidad, Peru, Ecuador, Amazonian Brazil and British Guiana.

The reduction of *Epidendrum yatapuense* to synonymy under *E. laxum* is based on a study of: 1) the original description of this concept and Cogniaux's amplified description in Martius' *Flora Brasiliensis*; and 2) the original Barbosa-Rodríguez painting of *E. yatapuense*, preserved in the library of the Orchid Herbarium of Oakes Ames, and the drawing (based on the original painting in *Flora Brasiliensis*). There is no doubt that *Epidendrum yatapuense* is referable to *E. laxum*.

TRINIDAD: November 1, 1865, *Prestoe s.n.* (Herb. Trin. s.n.); Maraval, November 17, 1934, *Sylvester s.n.* (Herb. Trin. 13073).

***Epidendrum moyobambae* Kränzlin** in Fedde Repert. Sp. Nov. 1 (1905) 185.

The Trinidad material which I studied (and which has always erroneously been referred to *Epidendrum patens*) cannot be distinguished from the Kränzlin concept *E. moyobambae*. Some of the Trinidad specimens are somewhat larger than material from South America.

Cogniaux cited a *Purdie* collection from Trinidad as *Epidendrum patens*, but I have not been able to examine it. In view of the homogeneity of the specimens cited below, it is probable that the *Purdie* collection is likewise referable to *Epidendrum moyobambae*. These two concepts may prove to be the same, but *Epidendrum patens* was described as having a paniculate inflorescence, whereas *E. moyobambae*, with its unbranched raceme, agrees with the Trinidad material.

The common name of *Epidendrum moyobambae* in Trinidad is reported to be "lamb's tail."

TRINIDAD: (Herb. Trin. 888); (Herb. Trin. 5581); Botanic Gardens, April 1887, *Hart s.n.* (Herb. Trin. 3680); St. Clair Experiment Station, April 12, 1908, *Broadway s.n.* (Herb. Ames 10710); Caparo, April 27, 1908, *Broadway s.n.* (Herb. Ames 11711); Cedros, May 10, 1918, *Sankerali s.n.* (Herb. Trin. 8747); Hindustani Road, via Princes Town, August 20, 1918, *Broadway s.n.* (Herb. Trin. 8820); base of Mount Tamana, April 18, 1920, *Britton, Britton & Hazen 1961* (Herb. Ames 20367); Moruga Road, Rock Forests, May 17, 1922, *Webbe s.n.* (Herb. Trin. 10137); Tamana, April 15, 1925, *Freeman s.n.* (Herb. Trin. 11199); April 17, 1929, *Murray s.n.* (Herb. Trin. 12128); St. Ann's, April 22, 1934, *Broadway s.n.* (Herb. Ames 40388); Caura Valley, May 7, 1949, *Wilson s.n.* (Herb. Trin. 14318; Herb. Ames 66933); Mount Tamana, alt. 1000 ft., June 1954, *Piening s.n.* (Herb. Trin. 15269; Herb. Ames 66927).

***Epidendrum nocturnum* Jacquin var. *minus* Cogniaux** in Bull. Soc. Roy. Bot. Belg. 43 (1906) 323.

This variety, hitherto known only from northern South America, is now reported from Trinidad on the basis of the two collections cited below.

TRINIDAD: Aripo Savannah, February 13, 1915, *Freeman s.n.* (Herb. Trin. 8042); Aripo District, March 21, 1922, *Broadway s.n.* (Herb. Trin. 10562).

***Epidendrum oncidioides* Lindley var. *gravidum* (Lindl.) Ames, Hubbard & Schweinfurth in Bot. Mus. Leaf. Harvard Univ. 3 (1935) 104.**

This concept has apparently not been previously cited as occurring in Trinidad. Its known range now includes Mexico, Middle America, Cuba, Puerto Rico, Trinidad, Colombia and Peru. A complete synonymy is presented by Ames, Hubbard & Schweinfurth (loc. cit.).

TRINIDAD: Botanic Garden, 1891, *Hart s.n.* (Herb. Trin. 5810); Botanic Garden, 1894, *Hart s.n.* (Herb. Trin. 5472); February 22, 1927, *Freeman s.n.* (Herb. Trin. 11719); February 2, 1931, *Broadway s.n.* (Herb. Ames 66922); Melajo Reserve, January 1949, *Ayliffe s.n.* (Herb. Trin. 14411).

***Epidendrum Rousseauae* Schlechter in Beih. Bot. Centralbl. 36, Abt. 2 (1918) 407.**

Epidendrum Rousseauae is new to the flora of Trinidad. It has hitherto been known only from Panama.

TRINIDAD: Morne Bleu, April 9, 1955, *Downs & Aitken 46* (Herb. Ames 67837).

***Epidendrum vincentinum* Lindley in Hooker Journ. Bot. 3 (1841) 88.**

Known previously from Costa Rica, Colombia and Peru, and many of the West Indian islands, *Epidendrum vincentinum* seems not to have been reported from Trinidad with the citation of botanical material.

TRINIDAD: Heights of Aripo, January 10-26, 1922, *Broadway s.n.* (Herb. Trin. 9905).

ERYTHRODES *Blume*

***Erythroides hirtella* (Sw.) Fawcett & Rendle Fl. Jam. 1 (1910) 29, t. 3, figs. 16-19.**

Satyrium hirtellum Swartz Prodr. (1788) 118.

This species seems not to have been reported from Trinidad or Tobago by Cogniaux.

TRINIDAD: St. Ann's, April 30, 1848 (Herb. Trin. 409); December 23, 1892, *Alexander s.n.* (Herb. Trin. 5075); Tucuche, February 27, 1893, *Broadway s.n.* (Herb. Trin. 5248).

Erythrodos trinitatis *Ames* Orch. 7 (1922) 76.

Erythrodos trinitatis has apparently been collected but once.

TRINIDAD: St. Ann's, 1888, *Broadway s.n.* (Herb. Ames 68183: drawings of TYPE).

HABENARIA *Willdenow*

Habenaria alata *Hooker* Exot. Fl. 3 (1827) t. 169.

Habenaria alata was not cited from the Colony by Cogniaux, nor have I seen specimens from the island of Trinidad.

TOBAGO: Montpelier, near Scarborough, October 3, 1909, *Broadway 3051* (Herb. Ames 11726, 11727, 26456; Herb. Gray 88); November 1914, *Sworder s.n.* (Herb. Trin. s.n.); near Mason Hall, Courland River Valley, October 19, 1937, *Sandwith 1858* (Herb. Ames 64123).

Habenaria Leprieurii *Reichenbach fil.* var. **heptadactyla** (*Reichb.f.*) *R. E. Schultes* comb. nov.

Habenaria heptadactyla *Reichenbach fil.* in *Schomburgk Fauna & Fl. Guian.* (1848) 1123, *nomen*; in *Linnaea* 22 (1849) 812.

There appear to be no appreciable structural differences in the flowers of *Habenaria Leprieurii* (*H. mesodactyla* *Grisebach*) and *H. heptadactyla*. In the latter, there are usually more flowers than in the former, and the flowers are congested at the very tip of the inflorescence, instead of being placed more or less loosely and distantly along the upper third of the inflorescence. It seems desirable to reduce *H. heptadactyla* to varietal status.

Habenaria Leprieurii var. *heptadactyla* occurs in Panama, Colombia, Venezuela, British Guiana, Amazonian Brazil and Trinidad.

TRINIDAD: Aripo, July 7-8, 1848 (Herb. Trin. 884); Aripo Savannah, April 16, 1908, *Broadway 2337* (Herb. Ames 10679); Aripo Savannah, February 13, 1915, *Freeman s.n.* (Herb. Trin. 8775); Aripo Savannah, August 16, 1922, *Broadway s.n.* (Herb. Trin. 10181); Aripo Savannah, August 7, 1925, *Williams & Freeman s.n.* (Herb. Trin. 11320; Herb. Gray 7745); Aripo Savannah, August 1934, *Wright s.n.* (Herb. Trin. s.n.); Aripo Savannah, July 27, 1943, *Beard 142* (Herb. Ames 62755); *Broadway 2903* (Herb. Ames 14579).

Habenaria monorrhiza (Sw.) Reichenbach fil. in Ber. Deut. Bot. Ges. 3 (1885) 274.

Orchis monorrhiza Swartz Prodr. (1788) 118.

One of the most common species of *Habenaria* in the West Indies, Middle America and northern South America, *H. monorrhiza* was not cited from Trinidad and Tobago by Cogniaux.

TOBAGO: Concordia, December 23, 1908, *Broadway 2426*, (Herb. Ames 11732, 11733); Indian Walk, January 5, 1910, *Broadway s.n.* (Herb. Ames 26464; Herb. Gray 100); Concordia, January 24, 1910; *Broadway s.n.* (Herb. Ames 16548); Adelphi, January 24, 1913, *Broadway s.n.* (Herb. Gray 99).

TRINIDAD: (Herb. Trin. 1965); June 8, 1865 (Herb. Trin. 1966); Oropouche, 1888, *Murray s.n.* (Herb. Trin. 3551); Santa Cruz, January 1890, *Broadway s.n.* (Herb. Trin. s.n.; Herb. Ames 68175); Belmont, St. Francis Valley Road, December 22, 1906, *Broadway s.n.* (Herb. Ames 10597, 10098, 10099, 62717); Chancellor Road, December 24, 1924, *Freeman s.n.* (Herb. Trin. s.n.); North Coast Road to Maracas Bay, January 27, 1952, *Baker s.n.* (Herb. Trin. 14725).

Habenaria pauciflora (Lindl.) Reichenbach fil. in Bonplandia 2 (1854) 10.

Bonatea pauciflora Lindley Gen. & Sp. Orch. Pl. (1835) 329.

Habenaria pauciflora, a widespread species throughout tropical America, has apparently been collected but once on the island of Trinidad.

TRINIDAD: St. Joseph Savannah, August 31, 1925, *Withycombe s.n.* (Herb. Trin. 11336).

Habenaria repens *Nuttall* Gen. N. Am. Pl. 2 (1818) 190.

An unusually widespread species in tropical and subtropical America, *Habenaria repens*, which normally grows in shallow water, was not cited from Trinidad by Cogniaux. Known from the island by but two collections, it would appear not to be common.

TRINIDAD: Los Bajos, June 6, 1925, *Williams s.n.* (Herb. Trin. 11180; Herb. Ames 67786); Cedros, *Broadway s.n.* (Herb. Trin. 9770).

IONOPSIS *Humboldt, Bonpland & Kunth*

Ionopsis pygmaea *Cogniaux* in Urban Symb. Antill. 6 (1910) 624.

This extraordinary little species of *Ionopsis*, known only from the type collection and apparently endemic to Trinidad, has never been figured. It has seemed advisable to publish the accompanying drawing made from the duplicate type in the Orchid Herbarium of Oakes Ames.

TRINIDAD: Caparo, March 17, 1908, *Broadway 2251* (Herb. Ames 10644).

Ionopsis utricularioides (*Sw.*) *Lindley* Coll. Bot. (1825) t. 39a.

Epidendrum utricularioides *Swartz* Prodr. (1788) 122.

Iantha pallidiflora *Hooker* Exot. Fl. 2 (1825) t. 113.

Ionopsis pallidiflora (*Hook.*) *Lindley* loc. cit. sub. t. 1904.

Cogniaux has maintained *Ionopsis pallidiflora* as a distinct species, principally on the basis of the bilobed gibbosity at the connate base of the lateral sepals, separating it from *I. utricularioides*, in which the gibbosity is usually simple. All other characters are so similar that it does not seem that the structure of the gibbosity (which, in the somewhat variable *Ionopsis utricularioides*, is not constantly simple) alone suffices for maintenance of *I. pal-*

lidiflora as distinct. It is, consequently, here reduced to synonymy.

KEGELIELLA *Mansfeld*

Kegeliella Houtteana (*Reichb.f.*) *L.O. Williams* in *Ann. Mo. Bot. Gard.* 29 (1942) 347.

Kegelia Houtteana Reichenbach fil. in *Bot. Zeit.* 10 (1852) 670.

A rather rare species, *Kegeliella Houtteana* occurs in Panama, Dutch Guiana, Jamaica and Trinidad. Both collections from Trinidad are recent, and, consequently, the genus was not reported from the Colony by Cogniaux.

TRINIDAD: Heights of Guanapo, August 24, 1930, *Skinner & Robinson s.n.* (Herb. Ames 36524); Morne Bleu, January 10, 1931, *Williams s.n.* (Herb. Trin. 12455).

MACRADENIA *R. Brown*

Macradenia lutescens *R. Brown* in *Bot. Reg.* (1822) t. 612.

A specimen was cited from Trinidad in the original description of *Macradenia lutescens*, but it was from cultivated material. There was, therefore, some doubt that this species, known from Florida, Cuba and Colombia, represented a native element of the Trinidad flora. Broadway's collection, reported as growing in "forests," albeit with no definite locality, establishes the fact that *Macradenia lutescens* is native on the island.

TRINIDAD: February 7, 1931, *Broadway s.n.* (Herb. Ames 67862).

MAXILLARIA *Ruíz & Pavón*

Maxillaria albiflora *Ames & Schweinfurth* *Sched. Orch.* 8 (1925) 56.

This represents the second and a topotypical collection of *Maxillaria albiflora*. The leaves and flowers are slightly smaller than in the material of the type (*Freeman & Wil-*

liams s.n.), but all the essential characters show no deviation.

TRINIDAD: Mount Tucuche, alt. 1500 ft., February 28, 1954, *Baker s.n.* (Herb. Trin. 15113).

Maxillaria Broadwayi (*Cogn.*) *R. E. Schultes comb. nov.*

Ornithidium Broadwayi Cogniaux in *Urban Symb. Antill.* 6 (1910) 612.

Material of this endemic of Tobago has not been available to me for study, but Cogniaux's very ample description of it enumerates so many differentiating characters that there can be no doubt as to its validity as a species. It seems that the transfer from *Ornithidium* to *Maxillaria* has not hitherto been made for this specific concept.

TOBAGO: Between Adelphi and Belmont, *Broadway 2474* (cited by Cogniaux).

Maxillaria trinitatis *Ames* Sched. Orch. 2 (1923) 34.

Maxillaria trinitensis [Ames apud] *Broadway* in *Orch. Rev.* 34 (1926) 202, *sphalm.*

Hitherto known only from the type collection, *Maxillaria trinitatis* is now recorded from several additional localities in Trinidad.

The type collection was cited by Ames as *Broadway 9890*. This, however, is the number of the specimen, a duplicate type, in the Trinidad Herbarium. Inasmuch as the type is deposited in the Ames Herbarium, some confusion might result from the transfer of this number to the collector. Mr. Broadway seldom used collection numbers; the numbers which have been used as though they were Broadway's invariably refer to the accession number of the specimen in the Trinidad Herbarium.

TRINIDAD: Las Cuevas Heights, January 4, 1861 (Herb. Trin. 1832); Heights of Aripo, January 10-26, 1922, *Broadway s.n.* (Herb. Ames 22672, TYPE; Herb. Ames 67049; Herb. Trin. 9800); Tucuche, Jan-

uary 10, 1922, *Freeman & Williams s.n.* (Herb. Trin. 10085); Trail to El Tucuche, January 2, 1948, *Simmonds 240* (Herb. Trin. 14070); El Tucuche, March 27, 1955, *Downs & Aitken 39* (Herb. Ames 67842).

Maxillaria variabilis *Bateman ex Lindley* Bot. Reg. 23 (1837) sub t. 1986.

Common throughout Middle America and known also from British Guiana, *Maxillaria variabilis* has apparently never been reported for the flora of Trinidad, notwithstanding the fact that the only two specimens of it which we have from the island were collected almost a century ago.

TRINIDAD: January 9, 1864 (Herb. Trin. 1821); Cedros, July 4, 1866, *Ristoe s.n.* (Herb. Trin. 2895); Tabaquite, January 13, 1955, *Downs & Aitken 50* (Herb. Ames 67798).

NOTYLIA *Lindley*

The first dichotomy in Cogniaux's key to the six species of *Notylia* which he recognized for Trinidad and Tobago is based on the presence and absence of a callus at the base of the lip. He separated *Notylia punctata* from the other five species because it alone had a callus. An examination of all material available from Trinidad indicates that a callus is present in every one of the species-concepts. According to Mr. Charles Schweinfurth, this character is very misleading and does not hold. Another character which Cogniaux has employed is the condition of the tips of the sepals: whether straight or revolute. This character is highly untrustworthy, for both straight and revolute sepal-tips can be found on flowers taken from a single inflorescence. Likewise, the length of inflorescence and the degree of union of the sepals seem to be extremely variable and unreliable characters. The same variability has been found in the muticous and apiculate condition of the sepals.

The following treatment of *Notylia* is proposed, inasmuch as *N. angustifolia* and *N. nana* do not appear to present any really stable and fundamental differences

which could be considered as specific; and since the concepts described by Cogniaux as *N. apiculata* and *N. Broadwayi* differ so slightly from *N. punctata* that one would hardly be justified in calling them varieties. *Notylia incurva* remains somewhat of a mystery. There is in the Trinidad Herbarium (2092) an inflorescence, the flowers of which differ from those of all other local material, which I am tentatively calling *Notylia incurva*. Lindley's description of the concept is so vague that it would be difficult to assign this name with certainty to any specimen. The specimen 2092 was determined, presumably at Kew by Rolfe, as representing this concept, and all of the characters of the flower would seem to agree with those specified by Lindley for *Notylia incurva*. Even though the name *Notylia incurva* is apparently rather ambiguous, I believe that the best course at present is to refer our specimen to it. The only certainty is that this specimen differs markedly, especially in shape of the lip, from all other Trinidad material. The lip is very broadly hastate instead of being very narrowly trulliform.

It would seem, then, that three species of *Notylia* are known from Trinidad and Tobago. These can be distinguished according to the following key.

1. Leaves narrowly linear. *N. angustifolia*
- 1A. Leaves broadly oblong or elliptic.
 2. Lip narrowly trulliform, apically acute or subobtuse. *N. punctata*
 - 2A. Lip broadly hastate, subtrilobulate, apically rounded. *N. incurva*

A summary of specimens referred to these concepts and a synonymy are herewith given.

Notylia angustifolia Cogniaux in Urban Symb. Antill. 6 (1910) 618.

Notylia nana Cogniaux loc. cit. 619.

TRINIDAD: Caparo, March 27, 1908, *Broadway* 2348 (Herb. Ames 10655a, 11684); Oropouche via Valencia, March 5, 1931, *Broadway* 7454 (Herb. Ames 10655); *Broadway* 2431 (cited by Cogniaux: TYPE of *Notylia nana*; Hart *s.n.* (cited by Cogniaux: TYPE of *Notylia angustifolia*).

***Notylia incurva* Lindley** in Bot. Reg. 24 (1838) Misc. No. 167.

TRINIDAD: Botanic Gardens, Hart *s.n.* (Herb. Trin. 2092); Hort. Loddiges (cited by Cogniaux).

***Notylia punctata* (Ker) Lindley** in Bot. Reg. 11 (1825) sub. t. 930.

Pleurothallis punctata Ker in Bot. Reg. 9 (1823) t. 759.

Gomezia tenuiflora Loddiges Bot. Cab. 9 (1824) t. 806.

Notylia apiculata Cogniaux in Urban Symb. Antill. 6 (1910) 617.

Notylia Broadwayi Cogniaux loc. cit. 618.

TRINIDAD: Botanic Gardens, Hart *s.n.* (Herb. Trin. 5665); Agua Santa, near Arima, 1908, *Broadway s.n.* (Herb. Ames 11692); Agua Santa, Arima, July 26, 1908, *Broadway s.n.* Herb. Ames 10671, 10672); North Trace via Princes Town, August 19, 1918, *Broadway s.n.* (Herb. Trin. 8835); Siparia, April 4, 1918, *Rogers s.n.* (Herb. Trin. 8768); Quare River, July 12, 1925, *Williams & Freeman s.n.* (Herb. Trin. 11264); Jackson Trace via Cap de Ville, April 1, 1931, *Broadway* 7503 (Herb. Ames 37541); Tamana, May 17, 1934, *Bruins-Lich. s.n.* (Herb. Trin. 13020); *Woodford ex Loddiges* (cited by Cogniaux); *Broadway A, B, C, D* (cited by Cogniaux).

OCTOMERIA *R. Brown*

***Octomeria grandiflora* Lindley** in Bot. Reg. 28 (1842) Misc. 64.

Cogniaux did not report this species from Trinidad. It is known from Brazil and Bolivia. The *Broadway* specimens are smaller in all parts than typical *Octomeria grandiflora*, but they are morphologically indistinguishable from this variable concept. The only other species of this genus on Trinidad appears to be *Octomeria graminifolia* (L.) R. Br.

TRINIDAD: January 6, 1927, *Broadway* 6515 (Herb. Ames 66920).

PERISTERIA *Hooker*

Peristeria cerina *Lindley* in Bot. Reg. 23 (1837)
t. 1953.

Cogniaux did not report this rare orchid from Trinidad. It was apparently first collected in 1930 by Broadway who reported it the following year (in Orch. Rev. 39 (1931) 35), stating that "this *Peristeria* seems to be only known from the Siparia districts of the Colony, where it has been met attached to trees, but is a scarce Trinidad plant."

TRINIDAD: Siparia, April 11, 1930, *Broadway* 7429 (Herb. Ames 36523).

Peristeria pendula *Hooker* in Bot. Mag. 63 (1836)
t. 3479.

This species appears hitherto not to have been reported from Trinidad with specimen citation.

TRINIDAD: Siparia, April 14, 1916, *Broadway* s.n. (Herb. Trin. 7656).

PLEUROTHALLIS *R. Brown*

Pleurothallis acutissima *Lindley* Fol. Orch. (1859)
Pleurothallis No. 277, 43.

Pleurothallis sertularioides (Sw.) Sprengel var. *trinitensis* Grisebach Fl. Brit. W. Ind. Isl. (1864) 609.

There seems to be no doubt that *Pleurothallis sertularioides* var. *trinitensis* can be referred to *P. acutissima*.

TRINIDAD: Aripo, April 16, 1908, *Broadway* 2333 (Herb. Ames 10663); Aripo Savannah, February 13, 1915, *Freeman* s.n. (Herb. Trin. 8025; Herb. Ames 67922); Matura, September 1, 1925, *Williams, Freeman & Cheesman* s.n. (Herb. N. Y. Bot. Gard.; Herb. Trin. 11326).

Pleurothallis archidiaconi *Ames* Sched. Orch. 9
(1925) 29.

The *Downs & Aitken* material represents the second collection of this Trinidad endemic.

TRINIDAD: Cumaca, December 1954 [flowering February 6, 1955], *Downs & Aitken* 11 (Herb. Ames 67846).

***Pleurothallis ciliata* Knowles & Westcott** Flor. Cab. 1 (1837) 39, t. 19.

Cogniaux did not cite this species as native to Trinidad. It is known from Colombia, Peru, British Guiana and Trinidad.

TRINIDAD: Agua Santa, Arima, April 16, 1908, *Broadway* 2341 (Herb. Ames 10643); Caparo, January 1, 1915, *Broadway* s.n. (Herb. Trin. 7840); Cedros, April 5, 1918, *Sankeralli* s.n. (Herb. Trin. 8791); Quare River, January 25, 1930, *Broadway* 7449 (Herb. Ames 37545, 66919).

***Pleurothallis diffusa* Poeppig & Endlicher** Nov. Gen. ac Sp. 1 (1835) 49, t. 86.

Known in the Andean regions from Bolivia and Peru north to Colombia, *Pleurothallis diffusa* is not enumerated in Cogniaux's orchid list of Trinidad.

TRINIDAD: (Herb. Trin. 6432); Aripo, November 11, 1863 (Herb. Trin. 1818); Heights of Aripo, April 11, 1922, *Broadway* s.n. (Herb. Trin. 10567); *Downs & Aitken* 33 (Herb. Ames 678451).

***Pleurothallis discoidea* Lindley** in Bot. Reg. 31 (1835) sub t. 1797.

Pleurothallis leptopetala Cogniaux ex Urban Symb. Antill. 6 (1910) 693.

It seems that Cogniaux's *Pleurothallis leptopetala* represents the same species concept as Lindley's *P. discoidea* and must, consequently, be reduced to synonymy.

Pleurothallis discoidea was described on the basis of a specimen from Trinidad, but the original and subsequent descriptions (Lindley in Fol. Orch. (1859) *Pleurothallis* 19; Grisebach, Fl. Brit. W. Ind. Isl. (1864) 608; Cogniaux, loc. cit. 406) are short and lack detail. With the original description, Lindley refers to a drawing in the Hooker Herbarium ("v. ic. pict. in hb. Hooker"), but this illustration appears to have been lost. Mr. Victor A. Summerhayes has sent from the Lindley Herbarium a tracing of the rough ink copy of the original drawing.

A comparison of the characters which Cogniaux so carefully set forth in his description of *Pleurothallis leptopetala* with this drawing and with the original description of *P. discoidea* indicates that, in all essential characters, the two concepts are identical. A study of the ample Trinidadian material hitherto determined as *Pleurothallis leptopetala* reveals that the lip may vary from cordate-ovate to triangular-ovate and from apically subacute to rather obtuse; the margins may be lightly sinuate or entire. The material examined shows little variation in relative sizes of floral parts.

Cogniaux, in his description of *Pleurothallis discoidea*, characterized the dorsal sepal as twice as long as the lateral sepals. This unusual characteristic is not mentioned in Lindley's original description. It is not indicated by the drawing of the type nor by any of the specimens from Trinidad which I am referring to *Pleurothallis discoidea*.

TRINIDAD: Cunupia, March 23, 1892, *Alexander s.n.* (Herb. Ames 7455); Arima, July 1, 1908, *Broadway s.n.* (Herb. Ames 12722, DUPLICATE TYPE); Base of Mt. Tamana, April 18, 1920, *Britton, Britton & Hazen, 1965* (Herb. Gray 2673); Heights of Aripo, January 10-26, 1922, *Broadway 9882* (Herb. Ames 22679); Heights of Aripo, April 11, 1922, *Broadway s.n.* (Herb. Trin. 10564); Saut d'Eau, December 14, 1930, *Broadway 7439* (Herb. Ames 37343); Caparo, *Broadway 2338* (Herb. Ames 10734).

The following sterile collections are possibly referable to *Pleurothallis discoidea*.

Arima, February 1846 (Herb. Trin. 1623); Arima woods, October 26, 1865 (Herb. Trin. 1963); Tucuche, January 29, 1893, *Hart s.n.* (Herb. Trin. 5206); Tucure River District, June 16, 1917, *Williams s.n.* (Herb. Trin. 8780); Mt. Tamana, April 18, 1920, *Freeman s.n.* (Herb. Trin. 9031); Morne Bleu, February 7, 1922, *Broadway s.n.* (Herb. Trin. 10689); Aripo, September 25, 1924, *Freeman s.n.* (Herb. Trin. 10796); Cumaca Road, 3rd mile, December 27, 1948, *Simmonds 316* (Herb. Trin. 14239).

***Pleurothallis ovalifolia* (Focke) Reichenbach fil.** in Walpers Ann. Bot. 6 (1861) 188.

Stelis ovalifolia Focke in Tijdschr. Natuur. Wetensch. 2 (1849) 202.

Pleurothallis rhomboglossa Reichenbach fil. in *Flora* (1865) 276.

This concept has been reported from Trinidad by Cogniaux and by Broadway as *Pleurothallis rhomboglossa*. Mr. Leslie A. Garay, Mr. Charles Schweinfurth and I are in agreement that *Pleurothallis rhomboglossa* should be treated as a synonym of *P. ovalifolia*.

TOBAGO: Great Dog River Valley, October 12, 1937, *Sandwith 1750* (Herb. Ames 64122).

TRINIDAD: January 13, 1846 (Herb. Trin. 412); Valencia, April 1920, *Britton s.n.* (Herb. Trin. 9245); Base of Mount Tamana, April 18, 1920, *Britton, Britton & Hazen 1969* (Herb. Ames 20356); Matchepoorie, March 11, 1921, *Britton & Britton 2221* (Herb. Ames 21172); Arena Forests, near Cumuto, December 3, 1926, *Broadway 6433* (Herb. Ames 38347); Cumuto-Tumpuna Road, October 1, 1953, *Aylliffe 145* (Herb. Ames 67011); Diego Martin, May 1956, *Downs & Aitken 94* (Herb. Ames 67011A).

***Pleurothallis plumosa* Lindley** in *Bot. Reg.* 28 (1842) Misc. 72.

Pleurothallis plumosa was described from material (*Loddiges 13*) said to have come from Trinidad. I have seen no collections referable to this species, however, with the single exception of the *Downs & Aitken* specimen cited below, which represents a slightly atypical and rather cleistogamous individual. The species is known from Costa Rica, Venezuela and Trinidad.

TRINIDAD: Morne Poin, alt. 1200 feet, June 9, 1955, *Downs & Aitken 53* (Herb. Ames 67800).

***Pleurothallis velaticaulis* Reichenbach fil.** in *Linnaea* 22 (1849) 824.

Pleurothallis velaticaulis, known from Cuba, Venezuela, Peru and Middle America, has apparently hitherto not been cited from Trinidad.

TRINIDAD: August 28, 1892, *Hart s.n.* (Herb. Trin. 4782; Herb. Ames 67818); Morne Bleu, February 7, 1922, *Freeman s.n.* (Herb. Trin. 10688); Between El Tucuche and Naranjo, January 2, 1948, *Simmonds 235* (Herb. Trin. 14072; Herb. Ames 68182).

PSILOCHILUS *Barbosa-Rodríguez*

Psilochilus macrophyllus (*Lindl.*) *Ames* *Orch.* 7 (1922) 45.

Pogonia macrophylla Lindley in *Ann. & Mag. Nat. Hist.*, ser. 3, 1 (1858) 335.

Psilochilus macrophyllus was cited from Trinidad by Cogniaux as *Pogonia macrophylla*. Known from Guatemala, northern South America and several of the islands in the West Indies, it is obviously a rather rare species in Trinidad where it is represented only through one collection: *Sieber 381*.

SCAPHYGLOTTIS *Poeppig & Endlicher*

Scaphyglottis fusiformis (*Griseb.*) *R. E. Schultes* *comb. nov.*

Hexadesmia fusiformis Grisebach *Fl. Br. W. Ind. Isl.* (1864) 623.

Scaphyglottis fusiformis is apparently endemic to the island of Trinidad, where it is not an uncommon element of the flora.

TRINIDAD: (Herb. Trin. 890); Maracas, March 26, 1861 (Herb. Trin. 1838); Oropouche, April 1896, *Alexander s.n.* (Herb. Trin. 6076; Herb. Ames 66993A); Botanic Gardens, April 1890, *Broadway s.n.* (Herb. Trin. 4031; Herb. Ames 66993); Agua Santa Estate, Arima, April 14, 1908, *Broadway s.n.* (Herb. Ames 10708); Caparo, April 28, 1908, *Broadway 2317* (Herb. Ames 10677, 10678); *Downs & Aitken 31* (Herb. Ames 67313).

Scaphyglottis modesta (*Reichb.f.*) *Schlechter* in *Fedde Repert.* 23 (1926) 46.

Tetragamestus modestus Reichenbach fil. in *Bonplandia* 2 (1854) 21.

Scaphyglottis modesta is known from the West Indies and the northern half of South America. It was not included by Cogniaux in his enumeration of Trinidad species. According to Broadway (in *Orch. Rev.* 35 (1927) 20) "a full-sized plant hangs down with leaf-stems two or more feet in length."

TRINIDAD: Botanic Gardens, March 5, 1918, *Broadway s.n.* (Herb. Trin. 8774); May 26, 1925, *Homersley s.n.* (Herb. Trin. s.n.); January 11, 1926, *Williams s.n.* (Herb. Trin. 11498); Cumaca Road, 3rd mile, December 27, 1948, *Simmonds 318* (Herb. Trin. 14240).

SPIRANTHES *L. C. Richard*

Spiranthes costaricensis *Reichenbach fil.* in *Bonplandia* 3 (1855) 214.

Gyrostachys costaricensis (Reichb.f.) O. Kuntze *Rev. Gen. Pl.* 2 (1891) 664.

Spiranthes costaricensis has apparently never been reported from Trinidad, It has probably been confused with *Spiranthes elata*. Vegetatively, these two species are similar, even though *Spiranthes costaricensis* usually is somewhat smaller than *S. elata*. The differences in flower, however, are such that it should be possible to distinguish the two easily. The apical part of the lip is transverse and broader than long in *Spiranthes elata*, whereas it is oblong-ovate to suborbicular in *S. costaricensis*. I have seen no Trinidad material which could be referred to *Spiranthes elata*, but Cogniaux cites a *Purdie* and a *Crueger* collection as representing this species.

TRINIDAD: February 16, 1849 (Herb. Trin. 1513); Tucuche, January 10, 1922, *Freeman & Williams s.n.* (Herb. Trin. 10084); Aripo Flats, March 25, 1934, *Bruins-Lich s.n.* (Herb. Trin. 12990); Tucuche, January 25, 1953, *Baker s.n.* (Herb. Trin. 14814); Between Brasso Seco and Madamus, January 9, 1955, *Herklots s.n.* (Herb. Trin. 15357; Herb. Ames 67051).

Spiranthes guayanensis (*Lindl.*) *Cogniaux* in *Martius Fl. Bras.* 3, pt. 4 (1895) 209, t. 47, fig. 2 (as *guyanensis*).

Goodyera guayanensis *Lindley* *Gen. & Sp. Orch. Pl.* (1840) 494.

Brachystele guyanensis (*Lindl.*) *Schlechter* in *Beih. Bot. Centralbl.* 37, Abt. 2 (1920) 373.

The spelling of the specific epithet of this concept

should be *guayanensis*, in conformity with the original orthography followed by Lindley. The change (probably in error) instituted by Schlechter has become the most widely used and generally accepted form.

TRINIDAD: Queen's Park, June 2, 1850 (Herb. Trin. 870); Queen's Park, May 1889, *Broadway s.n.* (Herb. Trin. 3792); Botanic Gardens, June 5, 1889, *Broadway s.n.* (Herb. Trin. 3806); Government House Grounds, June 4, 1907, *Broadway s.n.* (Herb. Ames 10171, 10172, 10173, 10174); St. Ann's, June 13, 1922, *Broadway s.n.* (Herb. Ames 39727); *Broadway s.n.* (Herb. Trin. 3913).

STELIS Swartz

Stelis trinitatis Ames Sched. Orch. 2 (1923) 15.

Stelis trinitensis [Ames apud] Broadway in Orch. Rev. 34 (1926) 134, *sphalm.*

Stelis trinitatis appears to be a very strict endemic at Aripo. The type was collected at the "Heights of Aripo" by Broadway. *Simmonds 230* was found at an altitude of 2000 feet, "by the Caves Trail," and *Simmonds 410* grew at 1200 feet. The *Downs & Aitken* collection was made in the "Cave Region."

The only other species of *Stelis* known from Trinidad and Tobago is the widespread *S. ophioglossoides* (Jacq.) Sw.

TRINIDAD: Mount Aripo, December 24, 1947, *Simmonds 230* (Herb. Trin. 14023); Mount Aripo, October 22, 1949, *Simmonds 410* (Herb. Trin. 14444; Herb. Ames 67804); Aripo, March 20, 1955, *Downs & Aitken 34* (Herb. Ames 67843).

STENIA Lindley

Stenia pallida Lindley in Bot. Reg. 23 (1837) sub t. 1997; 24 (1838) t. 20.

Stenia pallida is known from Venezuela, British Guiana and Trinidad. The accompanying plate, drawn from the herbarium specimens and alcohol material sent in by Dr. Downs and Dr. Aitken, and from their excellent photographs of the living plant, is published particularly to

point out a character which has not hitherto been described or figured: the lip is inverted and uppermost.

TRINIDAD: Botanic Gardens, 1894, *Hart s.n.* (Herb. Trin. 5591); Heights of Aripo, January 10-26, 1922, *Broadway s.n.* (Herb. Trin. 9898); El Tucuche, alt. about 2000 feet, March 20, 1955 [flowered May 19, 1955], *Downs & Aitken 38* (Herb. Ames 77844, 67863); *Bradford s.n.* (cited by Cogniaux).

TRIPHORA *Nuttall*

***Triphora surinamensis* (Lindl.) Britton** in Britton & Wilson *Sci. Surv. Porto-Rico and Virgin Islands* 5 (1924) 184.

Pogonia surinamensis Lindley in Hooker *London Journ. Bot.* 2 (1843) 674.

This species was reported from Trinidad as *Pogonia surinamensis*. The several recently-made collections indicate that this rather widely distributed species is not uncommon in Trinidad.

TRINIDAD: Maraval, July 4, 1847, *Crueger s.n.* (Herb. Trin. 414); O'Meara Savannah, July 7, 1848, *Purdie (?) s.n.* (Herb. Trin. 1625); Mora Forest, June 26, 1925, *Broadway s.n.* (Herb. Ames 30415); Bamboo Plantation, St. Joseph, October 1949, *Baker s.n.* (Herb. Trin. 14437; Herb. Ames 67927).

VANILLA *Swartz*

***Vanilla Hartii* Rolfe** in *Kew Bull.* 1899 (1899) 133.

Cogniaux listed *Vanilla Hartii*, citing the type (*Hart 6355*), but indicating that he had not seen it. The numerous collections made since 1898 show that *Vanilla Hartii* is a very distinct species. It is endemic to Trinidad and Tobago.

TOBAGO: Widow Woods, March 6, 1911, *Broadway s.n.* (Herb. Gray 1419).

TRINIDAD: Cabasterre, Arima, April 1898, *Hart 6355* (Herb. Trin. s.n.; Herb. Ames 67784); Agua Santa, Arima, May 4, 1915, *Broadway s.n.* (Herb. Trin. 8762); Mora Forest, east of Sangre Grande, April 10, 1921, *Britton 2841* (Herb. Gray 1420); Cunupia, *Hart s.n.* (Herb. Trin. 6356; Herb. Trin. s.n.).

Vanilla Wrightii *Reichenbach fil.* in *Flora* 48 (1865) 273.

Vanilla Wrightii must be rather rare in Trinidad. It is known only from these two collections.

TRINIDAD: Melajo Forest, May 1955, *Downs & Aitken* 56 (Herb. Ames 67793); *Fendler* 1007 (cited by Cogniaux).

WARCZEWICZELLA *Reichenbach fil.*

Warczewiczella flabelliformis (*Sw.*) *Cogniaux* in *Urban Symb. Antill.* 4 (1903) 182.

Epidendrum flabelliforme *Swartz Prodr.* (1788) 123.

Cogniaux cited for Trinidad only a *Bradford* collection for *Warczewiczella flabelliformis*. The recent collections indicate that it is a rather widely occurring orchid on the island.

TRINIDAD: March 1890, *Broadway s.n.* (Herb. Ames 7598); Tabaguite, November 25, 1924, *Farfan s.n.* (Herb. Trin. 11198), August 26, 1927 (Herb. Trin. 11778); Morne Bleu, March 23, 1928, *Homersley, Freeman & Williams s.n.* (Herb. Trin. 11959).

EXPLANATION OF THE ILLUSTRATION

PLATE XLVIII. (*Upper*) DICHAEA MURICATA (*Sw.*)
Lindl. Flowering tip of *Downs & Aitken 22.* (*Lower*)
EPIDENDRUM HARTII *Rolfe.* Flowers of *Downs &*
Aitken 30.